

level; and the advantages or disadvantages of the proposed method to the soil gas survey method that uses a gas trapping device, that is placed in the soil for an "extended" period of time, that collects organic vapors on a sorbent that is subsequently analyzed in the laboratory.

21. The Work Plan must describe the well construction material. In the future, it may be desirable to collect groundwater samples from these wells. Therefore, the well construction material and installation procedures should be consistent with the protocols specified in the SDCP.
22. Excess borehole cuttings should be handled as set forth in Sections 10.2 and 10.3 of Appendix A of the SDCP.
23. Section 7.7 must reference specific applicable sections of Appendix C of the SDCP, pertaining to sampling, chemical analysis, and data evaluation procedures.
24. Comments regarding the sampling and analytical procedures are set forth in Attachment 1 of this letter.
25. The Work Plan must specify that, upon request, split samples will be provided to EPA or NYSDEC.

In order to expedite the implementation of the Dioxin Investigation and the Sewer Evaluation, it is requested that Occidental respond to the above comments within 30 days.

The NYSDEC/EPA will contact you to schedule a teleconference to discuss these comments, in order to ensure acceptable resubmissions by Occidental.

Should you have any immediate questions regarding these comments, please contact William Wertz, Ph.D. of the NYSDEC at (518) 457-9255 or Alan Straus of the EPA at (212) 264-5131.

Sincerely yours,

Paul R. Counterman
Director,
Bureau of Hazardous Waste Facility Permitting
Division of Hazardous Substances Regulation
New York State Department of
Environmental Conservation

Andrew Bellina, Chief
Hazardous Waste Facilities Branch
Air and Waste Management Division
United States Environmental Protection Agency
Region II

Attachments

cc: E. Belmore, NYSDEC w/att.
P. Buechi, NYSDEC, Region 9 w/att.
R. Osar, DOL w/att.
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bcc: P. Counterman, NYSDEC w/att.
F. Haber, 2ESD-MM w/att.
M. Ferriola, 2ESD-SM w/att.
A. Straus, 2AWM-HWF w/o att. ✓
L. Livingston, 2OPM-PA w/att.
F. Langone, 2AWM-HWF w/att.

ATTACHMENT 1

Sewer Evaluation Work Plan

1. Section 2.1 describes a soil/gas survey to be used in locating wells for hydraulic testing. More information needs to be provided in terms of accounting for problems such as mistakingly sampling ambient air rather than soil gas and obtaining false negatives or lower values due to clay lenses, etc. Attachment A states that soil samples for laboratory analysis will be taken from the two locations recording the lowest PID readings. The plan needs to elaborate upon other checks and information being used to determine proper location of wells.

Also, Attachment A describes the soil/gas survey protocol. The information provided is inadequate. The plan needs to provide details of instrument calibration, quality control samples, and any other quality control activities associated with the soil/gas survey protocol.

2. Field equipment rinsate blanks and field duplicates need to be added to the quality control samples detailed in Section 5. The equipment blanks need to be done at a frequency of one per batch of equipment type cleaned (compositing is not allowed). All blank water must be analyte free and the method for demonstrating such must be included in the plan. Field duplicates need to be done at a frequency of 5%.

Also, the type and frequency of QC samples detailed in Section 5 should be consistent with those detailed in Appendix C of the SDCP.

3. Section 6 describes soil sieving/homogenization procedures for compositing and splitting soil samples. Our policy is that soil samples for volatile analysis cannot be composited, sieved, or homogenized in any way. Several of the analytes listed in Table 1 are volatile organics.
4. Section 7.7 of the plan states that procedures for chemical analysis are presented in Appendix C of the SDCP. Appendix C does not provide methods for soil analysis of the analytes in Table 1. The specific methods of sample preparation and analysis as well as data validation (comment 14 below on data validation also applies here) must be provided. Detection/quantitation limits and their method of determination also must be provided.
5. Sample containers, preservation, and holding time (from time of sample collection) requirements for Table 1 analytes in soil are not provided in Appendix C. Containers should be the same as for water. Preservation requirements should be

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cool, 4°C. BNA Table 1 analytes should have a holding time of 7 days to extraction and 40 days to analysis. Volatile Table 1 analytes should have a holding time of 11 days.

6. The plan does not address container cleaning procedures and associated quality control. Appendix C includes various options which are not adequate. IChem Series 300 containers described in Comment 12 below or equivalent should be used.

Dioxin Investigation Work Plan

7. Section 3.3 and certain subsequent sections state that HSL analytes are to be analyzed. EPA has replaced the HSL analytes with the Target Compound List (TCL) analytes. Which list will be analyzed? Will only HSL or TCL organics be analyzed?
8. Section 3.3 and subsequent sections state that samples for HSL analysis will be composited. We do not allow compositing of samples for volatile analysis.
9. Methods for analysis of additional site specific analytes not already included in the plan and which are not a subset of analytes already covered in this specific work plan (i.e., HSL or TCL organics) will not be included in any subsequent approval by me.
10. Section 3.10, on page 17, describes the proposed groundwater monitoring well construction material. Due to the low survey levels for TCDD and the site specific parameters (site specific parameters will be chosen following review of the TCL analytical data), and the potential for adsorption of organics, the well material must consist of a stainless steel well screen and casing in the saturated zone.
11. With respect to TCDD analysis, field equipment rinsate blanks and field duplicates need to be added to the quality control samples detailed in Section 6. With respect to TCL or HSL analyses, field equipment rinsate blanks, trip blanks, and field duplicates need to be added to the quality control samples detailed.

Equipment blanks need to be done at a frequency of one per batch of equipment type cleaned (compositing is not allowed). Please note that equipment rinsate blanks for TCDD should be done with trichloroethylene. Trip blanks consist of blank water in VOA vials. They are the first containers placed into the coolers which accompany samplers to various sampling points. They should be done at a frequency of one per day per aqueous matrix sampled, when volatile organics are analytes. Trip blanks are only analyzed for volatile organics. All water sources for

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blanks must be analyte free and the method for demonstrating such should be included in the plan.

Field duplicates need to be done at a frequency of 5%.

The frequency of each individual type of quality control sample should be included in Table 2.1 of Attachment A. The type and frequency of QC samples detailed in Section 6 and Attachment A should be consistent with what is detailed in Appendix C of the SDCP.

12. Page A-3 of Attachment A of the plan states that containers for field sampling for dioxin will be obtained from IChem or be performance equivalent. IChem sells 200 Series and 300 Series containers. Only the 300 Series includes quality control checks of each lot of containers cleaned. We ask that the 300 Series or equivalent be used. If equivalent containers are to be used, the cleaning and quality control procedures need to be detailed in the plan. The same applies to sample containers for HSL or TCL analytes.
13. Table 2.2 of the plan should be changed as follows.
 - a. The holding time for TCDD in water should be 10 days to extraction and 45 days to analysis.
 - b. The TCDD IFB should be 8/87; the organics should be 2/88.
 - c. TCL should replace HSL if appropriate.
 - d. Reporting requirements of exhibit B of the organics IFB should not be excluded from the table since that data should be submitted to us.
14. Page A-4 of Attachment A states that validation of the data will be performed based on criteria set forth in the CLP's National Data Validation SOP for Dioxin, dated March 15, 1985. Region II's SOP titled, CLP Dioxin (2,3,7,8 TCDD) Data Review - Revision II, dated December 14, 1987 (attached) or equivalent procedures should be used for validation of dioxin data.

For HSL or TCL organics the SOP titled, Laboratory Data Validation Functional Guidelines for Evaluating Organic Analysis, dated February 1, 1988 (attached) or equivalent procedures should be used. If equivalent procedures will be used, they must be provided for review prior to my approval of the plan.

Also, it must be stated in the plan that certification that validation procedures detailed in the plan approved by me were followed will accompany the analytical results. The plan also must include a statement that summary tables of all QC data (i.e., the deliverables described in Exhibit B of the CLP SOW) and a narrative summary describing how the

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data met or did not meet the criteria specified in the validation procedures will accompany the analytical results.

15. Section 10.1a): Cleaning of Drilling Equipment (p.29) required pressurized or steam cleaning of equipment and than submerging equipment in 10% acetone solution, 10% hexane solution, and 10% acetone solution. If a steam cleaning procedure is used, the solvent rinses are unnecessary. The steam cleaning will volatilize the volatile compounds and mechanically remove the semi-volatile and non-volatile compounds from the equipment.
16. Section 10.0b): Cleaning of Sampling Equipment (p.30) requires a wash, rinse, acetone rinse, hexane rinse, acetone rinse, and distilled water rinse. This procedure has no provisions for removing dioxin contaminants. The EPA requires a solvent rinse consisting of a trichloroethene rinse and distilled water rinse. Also, the Work Plan does not state whether two separate sets of sampling equipment will be used (i.e., 1 set for TCL parameters and 1 set for dioxin). If one set of equipment will be used, then the decon procedure should be a methanol rinse, hexane rinse, trichloroethene rinse, and distilled water rinse. If two sets of equipment are used, then the non-dioxin procedure should be methanol rinse, hexane rinse, followed by a distilled water rinse. For dioxin decon, use the trichloroethene rinse followed by a distilled water rinse.

Attachments

MAY 26 1989

Mr. Paul R. Counterman, P.E.
Director
Bureau of Hazardous Waste Facility Permitting
Division of Hazardous Substances Regulation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12233-0001

Re: Resource Conservation and Recovery Act (RCRA)
Occidental Chemical Corporation - Buffalo Avenue Plant
EPA I.D. No. NYD000824482
Dioxin Investigation Work Plan
Sewer Evaluation Work Plan

Dear Mr. Counterman:

The New York Facilities Section (NYFS) of the Hazardous Waste Facilities Branch has reviewed the documents entitled "Work Plan, Dioxin Investigation" and "Work Plan, Sewer Evaluation Program." These work plans were submitted by Occidental Chemical Corporation (OCC) pursuant to the corrective action requirements of their Part 373 and HSWA permits, issued in June 1988.

Please find listed below NYFS comments on the Dioxin and Sewer Evaluation Work Plans. Please find enclosed a copy of the draft dioxin investigation work plan for the Radio Tower Area, prepared by NUS Corporation, referenced in comment No. 10.b. Comments, on these work plans, from EPA's Region II, Environmental Services Division (ESD) were previously forwarded to your staff.

After the necessary internal discussions between EPA and DEC, please have your staff prepare a joint DEC/EPA comment letter to Occidental. The comment letter should include all of the DEC, NYFS, and ESD comments that have been mutually agreed to during the internal discussions and should also indicate that EPA/DEC will hold a teleconference/meeting with Occidental soon after their receipt of the joint comment letter in order to ensure acceptable resubmissions by Occidental.

Overall, Occidental has addressed the issues discussed during the scoping meetings/teleconferences between OCC, your staff, DEC-Division of Hazardous Waste Remediation/Bureau of Western Remedial Action staff, and EPA NYFS staff.

New York Facilities Section CommentsDioxin Investigation Work Plan

1. a. Since dioxin has been detected in the U-Area at locations 305 (2 ppb) and 306 (26.7 ppb), it is necessary to collect deeper samples at these locations, in order to determine the vertical extent of contamination. In addition to the proposal, in Section 3.1, to collect and analyze soil from the 6 to 18 inch depth at these two locations, soil should be collected down to the clay. Data from wells in the vicinity indicate that the depth to clay is approximately 9 to 12 feet below the land surface.

If dioxin is detected at or above 1 ppb in the 6 to 18 inch depth interval, dioxin analysis must be performed on the next 3 foot interval. If dioxin is detected in this 3 foot interval, the next 3 foot interval must be analyzed for dioxin, and so forth.

- b. As proposed for sample locations 310 through 315, if dioxin is detected at or above 1 ppb in the 0 to 6 inch depth interval, dioxin analysis will be performed on the 6 to 18 inch depth sample. (The 6 to 18 inch depth sample would have already been collected, at the same time the 0 to 6 inch sample was collected.) If dioxin is detected at or above 1 ppb in the deeper sample, additional samples down to the clay must be collected for a phased analysis, similar to that described in 1.a. above.
2. With regard to Section 3.2 (E-4 Vector), in addition to the 0 to 6 inch depth soil samples proposed to be collected for dioxin analysis at locations 316 through 319, samples should be collected from the 6 to 18 inch depth. The deeper samples should be analyzed for dioxin only if the upper samples contain dioxin at or above 1 ppb.
3. Section 3.3, Railroad Area.
 - a. Since dioxin has been found in surface samples along the railroad tracks at former locations 301, 302, and 304, additional deeper samples, to the 18 inch depth, should be collected at these locations and analyzed for dioxin.

- b. At proposed sample locations 320 and 321, soil samples, from the 6 to 18 inch depth interval, should be collected. These deeper samples need only be analyzed if the surface samples contain dioxin at or above 1 ppb.
4. Section 3.3 of the Work Plan references the vector survey protocols from "TCDD survey" (presumably the Occidental document entitled "Work Plan Survey of TCDD Migration From TCP Production Area, Buffalo Avenue Plant Site", August 1986) to be used for soil borings. The methodology to be used for collection of soil samples, sediment samples, and groundwater samples, for all areas, must be described in the Work Plan or the appropriate references to other work plans must be provided.
5. Occidental must specify how the fraction of the field sample, for dioxin/chemistry analysis, will be selected.
6. The proposal for the D-Area soil sampling and analysis for organics, included in Section 3.5, must be modified.
 - a. The Work Plan references both the Hazardous Substances List (HSL) and the Target Compound List (TCL). Since the HSL has been replaced by the TCL, the TCL parameters should be analyzed for.
 - b. A soil sample should be collected for analysis of the TCL parameters from each 3 foot length of split spoon sample. One composite sample from the entire core length is not acceptable.
 - c. No compositing will be allowed for volatile analysis.
 - d. The top three foot interval of soil at proposed sample locations FG-2 and FG-4 should be analyzed for the TCL parameters, to determine if these compounds are present and potentially contributing to dioxin migration. The previous S-11 surface sample (adjacent to proposed sample location FG-2) showed dioxin at 577 ppb, and the previous S-17 surface sample (near proposed sample FG-4) showed 18,600 ppb of dioxin.
7. Section 3.9 indicates that continuous split spoon samples will be logged according to geologic stratigraphy. Visual and olfactory observations of chemical presence should also be included in the log descriptions.

8. Drill cuttings will not be allowed to be placed back into the boreholes. Waste handling, storage and disposition of the cuttings must be in accordance with Section 10.2 and 10.3 of Appendix A of the SDCP.
9. In Section 3.10, Occidental proposes to submit a hydraulic/chemical report 30 days after the final month of groundwater level measurements. Occidental should submit the chemical data as soon as it becomes available, and follow-up with the hydraulic data in a subsequent submittal.
10. Section 3.11 (Radio Tower Property) must be expanded.
 - a. All construction/earth moving/soil disturbances that have occurred in the Radio Tower Area since the Follow-up dioxin sampling of 1986 must be documented.
 - b. The sampling strategy for the Radio Tower Area, provided in Attachment C to the Work Plan, was originally prepared by NUS Corporation for the EPA. The NUS strategy indicates that, in order to further define the areal extent of dioxin, twenty-seven surface samples is appropriate for Area A of the Radio Tower Area. The number of samples Occidental proposes for Subareas I and II appears acceptable. However, to be consistent with the NUS strategy, a total of 27 surface samples for Area A (including Subareas III and IV) is required. Therefore, the Work Plan should also include 8 samples in Subarea III and 10 samples in Subarea IV.
 - c. Section 3.1.1 must specify a 0 to 6 inch depth for the surface samples.
 - d. The vertical extent of dioxin must also be determined. The Work Plan must include a proposal to carry out a full characterization.
 - i. At each location where dioxin has already been detected at the surface at 1 ppb or greater, depth samples must be collected. Since the previous surface samples in this area were collected from the soil surface to a depth of approximately 2 inches, the deeper samples should be collected from 2 inches to the clay horizon. Stratigraphic data indicates that the

top of clay, in this area, is at a depth of approximately 8 to 9.5 feet.

Dioxin analysis should be performed on the 2 to 18 inch depth interval. If dioxin is detected at or above 1 ppb, in this 2 to 18 inch depth interval, dioxin analysis on the next 3 foot interval must be performed. If dioxin is detected in this 3 foot interval, dioxin analysis must be performed on the next 3 foot interval, and so forth, to the clay.

- ii. In addition to the surface samples required in 10.b. above, an additional sample from the 6 to 18 inch depth should be collected at each of the 27 sample locations. This lower sample need only be analyzed if dioxin is present in the upper sample at 1 ppb or greater. If dioxin is detected in these deeper samples at 1 ppb or greater, additional samples, to the top of clay, must be collected for a phased dioxin analysis, as described in 10.d.i. above.
 - e. This Section must include a figure that illustrates all proposed sampling locations in the Radio Tower Area.
- 11. In addition to analyzing for 2,3,7,8-TCDD, total TCDD should also be analyzed for.
 - 12. At those locations where NAPL is identified during field work, Occidental must collect NAPL for analysis of dioxin and the SDCP General Parameters.
 - 13. The Work Plan must specify that, upon request, split samples will be provided to EPA or DEC.
 - 14. The Work Plan must include a schedule of implementation for sampling at each geographic area of the project.

Sewer Evaluation Work Plan

- 15. The soil gas samples are proposed to be collected above the water table, between a depth of 3 to 5 feet below the land surface. Occidental must include a provision for selecting alternate sampling locations if the water table is encountered at the proposed sampling interval.

16. The preliminary selection of monitoring well locations specifies that the wells will be located every 100 feet along the force mains. Final selection of the monitoring well locations is subject to the soil gas survey results. Occidental must describe the precautions that will be taken in order not to locate the monitoring wells based on high soil gas survey levels resulting from sources other than the sewer force mains (e.g., surface spills, soil/groundwater contamination from other SWMUs).
17. Final well locations and soil gas survey locations should also be biased according to the locations of sewer pipe joints.
18. Occidental must describe the limitations of the soil gas monitoring device. Specifically, the Work Plan must state whether a total concentration of organics or concentrations of individual compounds will be measured; the detection level; and the advantages or disadvantages of the proposed method to the soil gas survey method that uses a gas trapping device, that is placed in the soil for an "extended" period of time, that collects organic vapors on a sorbent that is subsequently analyzed in the laboratory.
19. The Work Plan must describe the well construction material. In the future, it may be desirable to collect groundwater samples from these wells. Therefore, the well construction material and installation procedures should be consistent with the protocols specified in the SDCP.
20. Excess borehole cuttings should be handled as set forth in Section 10.2 and 10.3 of Appendix A of the SDCP.
21. Section 7.7 must reference specific applicable sections of Appendix C of the SDCP, pertaining to sampling, chemical analysis, and data evaluation procedures.
22. The Work Plan must specify that, upon request, split samples will be provided to EPA or DEC.

If your staff has any questions or would like to discuss this matter further, please have them call Alan Straus, of my staff, at (212) 264-5131.

Sincerely yours,

Frank A. Langone, Chief
New York Facilities Section
Hazardous Waste Facilities Branch

cc: Stephen Kaminski, NYSDEC Albany w/o encl
William Wertz, NYSDEC Albany w/encl
Salvatore Priori, NYSDEC Albany w/o encl

bcc: Frank A. Langone (2AWM-HWF) w/o encl
Fred Haber (2ESD-MM) w/encl
Alan Straus (2AWM-HWF) w/o encl ✓
L. Livingston (2OPM-PA) w/encl